Session Topic: Enhancing Energy Efficiency

- Energy Efficiency in public transport, vehicle efficiency standards and market-based mechanisms;
- Facilitating development, deployment and dissemination of energy efficient technologies.

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1) Promoting Energy Efficiency in the Public Sector

Case Study

Promoting an Energy-efficient Public Sector (PEPS)*

The PEPS initiative provides technical assistance to governments on developing energy management and procurement programs using globally applicable tools (e.g., website, guidebook, case studies). Direct benefits include lower government energy costs, lower demand on constrained electric utility systems, expanded use of renewable and distributed energy, increased water conservation, and reduced greenhouse gas and other emissions. To date, PEPS has worked with four cities in Mexico to establish procurement programs, resulting in estimated annual savings of over 5,000 MWh, while saving taxpayers at least $726,000/year in reduced municipal energy costs. PEPS also is sponsoring projects in China, India and South Africa. These efforts are based on the comprehensive approach taken by the U.S. Federal Energy Management Program to increasing efficiency in public facilities.
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Lessons learned

Promoting energy efficiency in the public sector can significantly lower operational costs, set an example for all consumers and "pull" the market for energy efficient products and services.

Obstacle confronted

There is a need to increase the awareness by the public sector at all governmental levels of the value of increasing energy efficiencies in public facilities; and to increase the capacity of governments to lower their operating costs and influence market demand for energy efficient products and services through their purchasing power. Lack of resources at the national and municipal levels also needs to be addressed.

Next steps

Scaling up use of the PEPS' "business model" and tools through regional cooperation to develop a best practices inventory and comparative evaluation of government energy management programs with a view to creating larger markets for energy efficient products and services.

2) Energy Efficiency In Agriculture

Case Study

Conservation Security Program (CSP)+

The U.S. Department of Agriculture's CSP gives farmers who qualify for the program the opportunity to receive payments for a variety of activities that reduce energy consumption on the farm. These activities include performing an energy audit, recycling used lubricants, reducing nitrogen use, and reducing tillage. In 2005, the contracts let by this Program increased carbon sequestered by over 4 million tons. Similarly, DOA's Environmental Quality Incentive Program provided both technical and financial assistance to farmers to implement irrigation water management practices that save both energy and water. Changing from high-pressure systems irrigation systems to low pressure systems saves 10 to 15% percent of energy use. The U.S. Department of Agriculture provides a simple web-based Energy Estimator tool to allow farmers to estimate energy and cost savings that can be achieved by changes in tillage, fertilizer, and irrigation practices.
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* - Case study listed in CSD Matrix

+ - Case study to be submitted to Secretariat during CSD-14

Lessons learned	**Choice of different agricultural practices may have large impacts on the amount of energy required to produce the same yield. Appropriate policies, technology transfer, and education may be effective in getting farmers to adopt energy-saving conservation practices.**
Obstacle confronted	Agriculture relies on energy to conduct farm operations such as plowing, planting, and harvesting, and for the energy used to create fertilizers and pesticides. Significant lowering of energy costs can increase farmer income.
Next steps	This incentives program, which is implemented on a watershed basis can be applied throughout the U.S. and is transferable abroad.

3) Efficient Use of Energy and Water in Municipal Water Utilities

Case Study	**Watergy*** The Alliance to Save Energy worked with the Emfuleni Municipality in South Africa to apply an innovative pressure management technology in the water system supplying Sebokeng and Evaton, two previously disadvantaged residential areas. A "Build, Operate, Train and Transfer" (BOTT) approach and shared-savings performance contract were used in which the contractor is paid from water savings to provide a basket of services including financing of capital, design, implementation, commissioning, operation and maintenance over the contract period as well as training of municipal staff in operations prior to handover of the installation. Water savings from this project are expected to be at least 7 billion liters per year (equivalent to about $3.5 million/year), which will translate into energy savings of more than 14 million kWh per year. *Point of contact on U.S. delegation: Larisa Dobriansky, larisa.dobriansky@hq.doe.gov.*
Lessons learned	**Large water and energy savings can accrue from relatively low cost investments using innovative financing and sound management practices.**
Obstacle confronted	Lack of financial, technical and technological capacity to improve the energy performance of municipal water systems has hindered project development.
Next steps	This program's business models, policy and financing approaches are highly transferable and scaleable and the potential for cost-effective results is significant given the urgent need of utilities to address the existing high levels of waste of water and energy resources in municipal water systems.

Additional Examples:

- Clean Cities+
- Federal Energy Management Program+
- U.S. Dept. of Energy Management Program+
- Smart Way Transport Partnership+
- U.S. Partnership for Home Energy Efficiency+
- Efficient Energy for Sustainable Development Partnership+
- Bilateral Climate Agreement+
- Climate Vision and Climate Leaders+
- USDA Rural Development Program+
- Solar Water Heating for South Africa Municipal Infrastructure Delivery*
- Methane to Markets*
- EPA Voluntary Methane Program*
- Innovative Financing for Energy Efficiency – Mexico*
- California Energy Efficiency Financing Program+
- U.S. Department of Energy, Energy Savers Campaign
- USAID South Regional Initiative+

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